Commonwealth of Kentucky
Division for Air Quality

PERMIT APPLICATION SUMMARY FORM

Completed by: Ralph Gosney, P.E.

GENERAL INFORMATION:

Name:	Free Flow Packaging International, Inc.
Address:	1 Graham Way Hopkinsville, Kentucky
Date application received:	November 10, 2003
SIC/Source description:	3086/ Foamed polyethylene sheets manufacturing source
Source I. D. No.:	21-047-00099
Source AI No.:	37673
Activity No.:	APE20040001
Permit number:	V-05-068

APPLICATION TYPE/PERMIT ACTIVITY:

[ ] Initial issuance
[ ] Permit modification
__Administrative
__Minor
__Significant
[X] Permit renewal
[ ] General permit
[ ] Conditional major
[X] Title V
[ ] Synthetic minor
[X] Operating
[ ]Construction/operating

COMPLIANCE SUMMARY:

[ ] Source is out of compliance
[X] Compliance certification signed
[ ] Compliance schedule included

APPLICABLE REQUIREMENTS LIST:

[ ] NSR
[ ] PSD
[ ] Netted out of PSD/NSR
[ ] NSPS
[ ] NESHAPS
[ ] Not major modification per 401 KAR 51:017, 1(23)(b) or 51:052,1(14)(b)
[X] SIP
[ ] Other

MISCELLANEOUS:

[ ] Acid rain source
[ ] Source subject to 112(r)
[ ] Source applied for federally enforceable emissions cap
[ ] Source provided terms for alternative operating scenarios
[ ] Source subject to a MACT standard
[ ] Source requested case-by-case 112(g) or (j) determination
[ ] Application proposes new control technology
[X] Certified by responsible official
[ ] Diagrams or drawings included
[ ] Confidential business information (CBI) submitted in application
[ ] Pollution Prevention Measures
[ ] Area is non-attainment (list pollutants)

EMISSIONS SUMMARY[(1)]:

Pollutant	Potential (tpy)	Actual (tpy)[2]
PM/PM10	0.17	0.00
SO_2	0.17	0.00
NOx	2.25	0.00
VOC	370.71	125.84
CO	0.54	0.00
Hexane (HAP)	0.04	0.00
Total HAPs	0.04	0.00

Notes:
(1) Please refer Appendix A of the Statement of Basis for detailed emission calculations (Pages 1 through 5).
(2) Actual emissions are based on Emissions Inventory System report for 2005.

Source Process Description:

Free Flow Packaging International (F P International), Incorporated produces foamed polyethylene and polystyrene sheets for packaging. In the polyethylene foam plant, polyethylene along with isobutane, ethane, and glycerol monostearate are used as the raw materials and are injected into the extruder. The extruded foamed polyethylene sheets go through the slit tube and winder. The wound foamed polyethylene sheets are stored in the warehouse. The bad sheets (approximately 8%) are reprocessed to get polyethylene resin. The major emissions from this process are the VOC's (Isobutane emissions). The source also has isobutane and ethane storage tanks. The isobutane tanks are pressurized tanks. The ethane tanks are tube trailers and are not filled on site. They are replaced as needed.

In the polystyrene loosefill plant, polystyrene is fed to an extruder where it is melted and pressurized and injected with a blowing agent mixture of isopentane and isobutane. As the material exits the extruder it creates a plastic foam which is then formed into a trademark "Figure 8" cross-section, cooled, and cut into finite pieces. The cut particles from the extrusion line are then passed through an expander where they are exposed to live steam. The particles are then held for several hours in the intermediate storage silos while additional expansion occurs. The particles are then put through a second expansion step in which they are again exposed to live steam. The expanded product is dried in the hot room, which is heated to approximately 140˚F. The product from the hot room is transferred to the warehouse where it is stored until it is packaged in fourteen cubic foot bags or loaded directly into bulk trailers for shipment.

The source consists of the following permitted emission units:

(a) Polyethylene (PE) Foam Plant, consisting of:

(1) One (1) foam extrusion line, consisting of polyethylene foam sheet extruder, slit tube and winder, identified as P-1 and constructed in June 1999, with a maximum foam sheet processing rate of 419 tons per year, and exhausting to one (1) stack P1;

(2) One (1) PE scrap reprocessing operation, identified as P-2 and constructed in June

1999, with a maximum foam sheet processing rate of 419 tons per year, and exhausting to one (1) stack P2;

(3) One (1) PE foam sheet warehouse, identified as W-1 and constructed in June 1999, with a maximum foam sheet processing rate of 419 tons per year, and exhausting inside the building.

(b) Polystyrene (PS) Loosefill Plant, consisting of:

(1) One (1) PS extrusion line, consisting of polystyrene loosefill extruder, identified as P-3 and constructed in 2001, with a maximum foam processing rate of 148 tons per year, and exhausting to one (1) stack P3;

(2) One (1) PS expansion equipment, identified as P-4 and constructed in 2001, with a maximum foam processing rate of 148 tons per year, and exhausting to one (1) stack P4;

(3) PS intermediate storage and hot room, identified as W-2 and constructed in 2001, with a maximum foam processing rate of 148 tons per year, and exhausting inside the warehouse;

(4) PS product storage, identified as W-3 and constructed in 2001, with a maximum processing rate of 148 tons per year, and exhausting inside the warehouse;

(c) One (1) natural gas fired boiler, identified as B-1, constructed in 2005, with a maximum heat input rate of 5.23 million British thermal units per hour, exhausting through one (1) stack B1; and

(d) One (1) crystal clean cold cleaning degreaser, identified as EP-1, with a maximum solvent consumption rate of 24 gallons per year.

Emission and Operating Caps Description:

The source requested to limit VOC emissions from the PE foam plant and PS loosefill plant to less than 245 tons per year and 225 tons per year, respectively. The source is not restricted as to hours of operation or quantity of product produced while remaining within these emissions limitations.